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In Cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS - SEPTEMBER 29, 1951
(Thirteenth Cotton Insect Survey Report for 1951)

Rains during September made conditions favorable for the boll weevils in many localities. There is danger that the weevils may increase this fall and be numerous next spring where rains have caused the cotton to put on new growth, unless the farmers have cut the cotton stalks early, defoliated with chemicals, or pastured the old cotton fields early enough to prevent the build-up of late-season weevil populations.

Pasturing cotton fields late in the season after the cotton crop has been harvested is an old practice in many areas. On any farm where the boll weevil or pink bollworm occurs, pasturing the cotton fields is an excellent practice that helps reduce the insect populations. Pasturing should be encouraged wherever the boll weevil or pink bollworm occur.

CUT COTTON STALKS AS EARLY AS POSSIBLE. Cotton is being harvested earlier than in any previous year. More than 4 million bales of cotton have been ginned and there are thousands of acres in each of a dozen States where the danger of serious boll weevil infestation in 1952 could be greatly reduced by the cutting of the green cotton stalks immediately so as to reduce the number of weevils that will go into hibernation.

The early cutting of the green cotton stalks is important on all farms where either the boll weevil or the pink bollworm occurs.

The Census Bureau reported that 3,661,915 bales of cotton were ginned by September 16, 1951. In support of the statement that there are thousands of acres where cotton has been harvested and where the stalks should be destroyed, the following information from a release issued by the Census Bureau on September 24 should be noted:

BALES OF COTTON GINNED PRIOR TO SEPTEMBER 16, 1951

State	1951	1950	1949
Alabama	363,562	106,425	174,767
Arkansas	118,166	16,703	219,031
Florida	13,091	6,355	6,798
Georgia	451,321	172,859	178,131
Louisiana	311,648	121,447	195,383
Mississippi	462,200	149,256	242,908
Missouri	19,239	71	37,263
North Carolina	84,817	7,973	7,268
Oklahoma	6,818	190	10,575
South Carolina	321,169	89,930	102,947
Tennessee	16,273	209	44,508
Texas	1,457,702	790,398	1,437,114

TWO IMPORTANT RELEASES FROM THE TEXAS A & M COLLEGE EXTENSION SERVICE

"Conditions Favorable for Early Cotton Stalk Destruction - College Station, September 13: The dry, hot weather that has prevailed over much of Texas during the past several weeks has dropped yields and caused cotton to open prematurely and earlier than normal in most areas. This condition on the other hand, points out A. C. Gunter, Extension Entomologist of Texas A & M College, gives cotton farmers an opportunity to practice one of the most effective of all control methods against boll weevils and pink bollworms -- early stalk destruction. Gunter points out other advantages that go with community and county-wide cotton stalk destruction programs: First, the added organic matter helps condition the soil and will increase its water holding capacity. Second, the early destruction aids in controlling insects, especially the boll weevil and pink bollworm. And third, as a direct result of improved soil and fewer insects cotton yields and profits are increased. To be effective, Gunter says, the program must be carried out on a community or county-wide basis or better still on an area basis. Right now moisture conditions are not favorable for plowing and this may prove to be a handicap but stalks should be cut and made ready for plowing when the rains do come. A shredder type stalk cutter is best but the heavy roller type cutters which cut the stalks into small pieces also do a good job. Removing the wings from the middlebuster will aid in making the plowing job easier if the ground is too hard and dry for normal plowing, says Gunter. He points out also that there is still plenty of time to plant a winter legume crop and suggests that this be done to further increase the yields of crops that will be planted next year."

"Taking a Big Chance - College Station, September 27: Farmers who take the chance of getting a top crop from this year's drought stunted cotton may be inviting trouble from their arch enemies, the boll weevil and pink bollworm. According to A. C. Gunter, Extension Entomologist of A & M College, cotton will respond to the recent rains and start growing and fruiting, but the chances are slim that very much cotton will ever be harvested from this late growth. Here's what happens says the entomologist. The cotton insects move into the fields and immediately go to work on every new square and boll. Examination will reveal that a very high percentage of the new forms have been attacked and will never make cotton. The insect population will build up and the bugs will go into winter hibernation in large numbers and because they have had plenty of food they will be strong and healthy. Next spring they will emerge and start working on the young cotton, thus causing yield losses and large expenditures for insecticides. Gunter says that research has proved that next year's population of boll weevils and pink bollworms can be greatly reduced if cotton stalks are destroyed at least 30 days before the first killing frost. The reason is simple. By destroying the stalks early, the food supply of these pests is completely cut off and they are forced to go into their winter quarters hungry. A large percent will die before the next cropping season begins. Early stalk destruction also cuts off one or more generations of the bugs and thus greatly reducesthe number going into hibernation. Cotton farmers have demonstrated many times the effectiveness of early stalk destruction in controlling cotton insects, and especially when carried out on a community or county-wide basis. In areas where early cotton stalk destruction cannot be practiced and where pink bollworms exists, it is better, say Gunter, to leave the cotton stalks standing until after a hard freeze before destroying them. The insects that are hibernating in the dried up bolls and other waste on or above the ground surface are more likely to be killed by the freezing weather if they are left exposed. Gunter points out that there are many types of cotton stalk cutters but adds that the shredder types seem to do a better job because they cut

the stalks into smaller pieces and this makes the turning under job easier. A final word of caution, Gunter says, be sure the plants are completely destroyed so they will not sprout. New growth provides the insects with new supplies of food and gives them a new lease on life."

PINK BOLLWORM

L. A. West, Division of Pink Bollworm Control, reported during the week ending September 15: Louisiana: One pink bollworm was found in the inspection of 200 blooms in a cotton field in Vermilion Parish, 12 miles south of Abbeville. No pink bollworms were found in the examination of about 1200 bushels of gin trash in the parishes of Acadia, Calcasieu, Evangeline, Iberia, Jefferson Davis, Lafayette, St. Landry, and St. Martin. However, five pink bollworms were found in Vermilion Parish in the examination of 640 bushels of gin trash.

Texas: Pink bollworm was found in only one county outside of the regulated area, Harris County, where two pink bollworms were collected. Within the regulated area, pink bollworms were found in Limestone, McLennan and Williamson Counties. Examination of green bolls showed heavy pink bollworm infestations in Kinney, Uvalde, and Val Verde Counties. Bloom examinations disclosed the presence of pink bollworms in Dimmit, Midland, San Patricio, and Uvalde Counties.

R. W. White, Leader in Pink Bollworm Control, stated on August 22: "Eleven counties -- Calhoun, Goliad, Jackson, LaSalle, Lavaca, Matagorda, Refugio, San Patricio, Victoria, Hidalgo, and Starr -- showed a definite increase in the number of pink bollworms per bushel. Twelve counties -- Atascosa, Bee, Bexar, Cameron, Frio, Jim Hogg, Live Oak, Maverick, Wilson, Webb, Zapata, and Zavala -- showed a definite decrease. In Colorado, DeWitt, Gonzales, Gadalupe, Karnes, and Wharton Counties the difference in degree of infestation for the two years was less pronounced as of this date. Pink bollworms have been found in each of the 37 counties in the regulated area of Texas where gin trash inspection has been done this season. The infestation seems to be very general. In most of the heavier infested counties 100% of the samples are infested, and there are very few below 70%."

On September 8 A. J. Chapman reported that 585,262 bales of cotton had been ginned in the four Lower Valley counties, Cameron, Hidalgo, Starr, and Willacy. The cotton stalks have been cut in a large percentage of the fields where picking has been completed. However, a large acreage over the Valley was yet to be picked. The Commissioner of Agriculture announced on September 10 that the "plow-up" deadline had been extended to September 23. This extension of the date was necessary because some of the farmers were unable to get their cotton harvested at an earlier date. The extension of the date will, however, permit many pink bollworms and boll weevils to develop and these insects are likely to be much more numerous next spring than they would have been if the cotton stalks had been cut by September 1, as they were in 1950.

Pink bollworms were found in 49 of the 50 cotton fields examined during the week ending September 8 in Cameron, Hidalgo, Starr, Willacy, Maverick, and Webb Counties. The one field where no pink bollworms were found is in Willacy County where the infestations were much lower than in the other counties.

In the examination of nearly 9,000 bushels of gin trash, during August, pink bollworms were found in the following 51 counties: Aransas, Atascosa, Austin, Bastrop, Bee, Bexar, Brazoria, Brooks, Burleson, Burnet, Caldwell, Calhoun, Cameron,

Colorado, DeWitt, Duval, Fayette, Frio, Ft. Bend, Goliad, Gonzales, Guadalupe, Hays, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kleberg, LaSalle, Lavaca, Lee, Live Oak, McMullen, Matagorda, Maverick, Milam, Nueces, Refugio, San Patricio, Starr, Travis, Victoria, Waller, Washington, Webb, Wharton, Willacy, Wilson, Zapata, and Zavala.

Pink bollworms were found by the inspection of cotton blooms and squares in 9 counties: Bee, Duval, Jim Hogg, Jim Wells, Kleberg, Live Oak, McMullen, Refugio, and San Patricio.

Pink bollworms were found by green boll inspections during August in 16 counties: Bee, Bexar, Calhoun, Cameron, Dimmit, Duval, Hidalgo, Jim Hogg, Jim Wells, Kinney, Kleberg, Live Oak, Nueces, Refugio, San Patricio, and Val Verde.

Other States: The pink bollworm inspection report for the month of August 1951 states that in the examination of more than 1,100 bushels of gin trash from 15 counties in Georgia, 8 counties in Alabama and 3 counties in northern Florida, no pink bollworms were found.

COTTON INSECT CONDITIONS IN CALIFORNIA

Stewart Lockwood, Entomologist, State Department of Agriculture, Sacramento, wrote on September 11 concerning cotton pests and the chemicals used for their control in California: "Surveys of insect damage in cotton fields has been completed now. As you know, the July report of 'California Cotton Acreage' showed 1,341,000 acres under cultivation at that time in this State. In 1949, 85% of the cotton acreage (963,000 acres) was dusted at least once with 5% DDT and at least 50% sulphur and applied at the rate of 30 pounds per acre. In 1950, pests were much less numerous and only 50% of the acreage (586,000 acres) were dusted. At the present time most of this year's acreage (1,341,000 acres) has been dusted with the same material at least once. A more accurate statement of acres will be made later. In the Palo Verde Valley many growers have dusted four times ten days apart, with parathion and sulphur. The combination of DDT and sulphur has been most effective against lygus bugs and thrips. The bean thrips has not been much of a factor for the past two years. This dust has been almost as effective against the bollworm and in general fields so treated have not been damaged by aphids. Control of spider mites and some stink bugs has not been so good, especially spider mites. Sulphur dust alone is not effective, either as a killer or repellent of the bean thrips, but it has been my observation that sulphur dusted fields were greener, more vigorous, and produced bigger plants than neighboring fields not dusted. Plant breeders informed me years ago that sulphur dust on cotton foliage acted as a 'Quick ferilizer, a tonic' to the cotton plant. In many instances, for many years sulphur dust has stopped or markedly slowed the damage being done to cotton by spider mites. Although it did not always kill as great a percentage as desired, application of sulphur rather than more expensive and more hazardous materials has enabled growers to harvest a good crop with a smaller amount of expense during the growing season when many of them, in past years at least, didn't have much money to use. To dust the cotton acreage only one time this year, California will use almost 20 million pounds of sulphur and two million pounds of DDT."

A letter from Gordon L. Smith, Entomologist, Agricultural Experiment Station, Shafter, dated August 15 contains information that will be of interest to many, as follows: "We have done much work with other acaracides. Aramite has given more satisfactory results than most other acaracides that are in supply. It was

very difficult to obtain Aramite in July. The control of mites and insects with organic phosphates is becoming less satisfactory than we expected at first. Reinfestations occur too soon following their use and the short residual effect makes two closely timed applications necessary."

Lauren D. Anderson, Associate Entomologist, reporting on cotton insect conditions in the Imperial, Coachella and Palo Verde Valleys, wrote on September 25: "We have not had unusually heavy damage by any of the cotton pests in our area during the early part of the season. However, bollworms and salt-marsh caterpillars are doing some damage in late-planted fields at this time. Also white flies and aphids are beginning to show up in injurious numbers in a few fields. Lygus bugs have not been much of a problem this season nor have spider mites except in a few instances. Where mites have been a problem it has usually been associated with improperly timed insecticide applications early in the season."

COTTON INSECT CONDITIONS IN ARIZONA

On September 14 W. A. Stevenson reported: "Maricopa County: Bollworms, as in the past several weeks, continued to be the major pest on cotton in the Salt River Valley. Worms and egg populations are high in many fields. Salt-marsh caterpillars are also increasing in many areas. At present most of the caterpillars are small. They are doing some damage to cotton in spotted areas. Many farmers are having their cotton fields dusted with 15% toxaphene, 5% DDT plus sulfur to control both salt-marsh caterpillar and bollworm infestations.

"Pinal and Pima Counties: Salt-marsh caterpillars and aphids are the principal cotton pests in Pinal and Pima Counties. Excellent control of salt-marsh caterpillars was secured in several cotton fields with a spray applied at the rate of 7½ gallons that deposited 3 pounds of toxaphene plus 1 pound of DDT per acre."

Edgar A. Taylor of the Division of Truck Crop and Garden Insect Investigations wrote on September 14: "Salt-marsh caterpillar occurs in cotton and castor beans. Many moths in cotton and freshly deposited egg masses indicate another brood. Numbers of migrating larvae have decreased in some fields, possibly due to insecticide applications."

William Kauffman collected 96 "bollworms" and other lepidopterous larvae on cotton, as follows: 55 beet armyworms, Laphygma exigua, and 3 bollworms, Heliothis armigera, were collected on July 21 and 29 at Eloy, Pinal County; at Continental, Pima County, 1 beet armyworm and 14 bollworms were collected on August 6; at Marana, Pima County, collections made in two fields on August 7 included 9 bollworms, 1 fall armyworm, Laphygma frugiperda, and 1 "looper" of the Autographa group: and on August 8, 13 bollworms were collected in Santa Cruz County. On July 20 Mr. Kauffman found the cicada, Diceroptrocta apache Davis, attacking cotton near Ft. Thomas, Graham County. (Det. L. M. Russell)

COTTON INSECT CONDITIONS IN TEXAS

Allen C. Gunter, Extension Entomologist, College Station, wrote on September 24: "I am afraid that we are getting a poor clean-up job done this year in the Lower Valley since their plow-up date has been extended from August 31 to September 23. There may have been another extension, however, I have not been advised of any such action. Leafworms are occurring in the Plains area of West Texas and in some localized area are sufficiently abundant to warrant control at the present time, however, they are certainly not generally abundant enough throughout the whole area and I believe are going to be of little or no consequence this year.

Certainly several other fields will probably need poisoning before the crop is done but I do not believe that this will be necessary on any sizable acreage. The bollworm infestation seems to be about over and the careless worm (Loxostege similalis) infestation is also under control."

COTTON INSECT CONTROL IN OKLAHOMA

Bulletin No. 417 issued by the Oklahoma Cotton Ginners Association on September 4, 1951 has three paragraphs under the heading "Cotton Insect Control" as follows: "Cotton insect control measures are all but completed for this year. Some late fields still fruiting are receiving applications of poison. Control measures carried out by the growers have exceeded all expectations. It is regretful that dry weather has prevented many growers from capitalizing fully on their efforts. By and large, results have been satisfactory and new lessons were learned in bollworm control.

"Many individuals played a prominent part in the season's activity and in addition to the efforts of the associations' membership, other agencies were also very active. We are indeed indebted to the Extension Service, Veteran's Agriculture Teachers, and Farm Home Administration. The radio and press was the media which spread the information far and wide. Do not fail to let those in your area who had a part, know that their assistance was recognized and appreciated. You'll be calling on them for help another year.

"There is one individual above all others who untiringly devoted the long, hot summer weeks to riding hord over the State's Insect Control Program. All of the week days were spent in the field in the four corners of the State and the weekends were spent tabulating the insect reports, summarizing the results, mailing them out and working on news and radio releases. This completes about 23 years of cotton insect control work on his part and with all our efforts thrown in the fight I am sure the results of this season's work is the highlight of his long tenure of service. Working for 23 years in one State on a controversial a matter as cotton insects, speaks for itself. Our heartfelt thanks to Mr. C. F. Stiles, Extension Entomologist."

COTTON INSECT CONDITIONS IN OKLAHOMA

C. F. Stiles, Extension Entomologist, wrote on September 27: "We have received reports that boll weevils have been moving around from one field to another in large numbers in Kiowa and Stephens Counties, and practically all of the late bolls throughout the southern part of the State are now infested with weevil grubs. Many of them will remain in the bolls as fully developed weevils until the bolls open. While the hot dry weather here in the State checked boll weevil infestations some, it certainly did not control them. And when weevils are controlled here by hot, dry weather cotton is usually badly injured and yields are greatly reduced. So far we have had no reports of any cotton being defoliated by the cotton leafworm. A few fields are being chemically defoliated, but most farmers will depend upon frost to defoliate and much of the cotton in Southwest Oklahoma will not be harvested until after frost. This makes it practically impossible to do much stalk destruction in the State before the weevils have moved to hibernation. In Eastern Oklahoma the farmers like to use the cotton fields for late pasture and very few farmers will plow under any stalks until after a fairly hard freeze. Some fields where large numbers of cattle are turned in practically all the small squares and bolls will be eaten by the cattle before frost. I certainly wish

it was possible for us to have state-wide stalk destruction like they do in South Texas, but I don't believe that will ever happen on a large scale in this State for we cannot get our cotton open and harvested until after frost in most areas of the State."

COTTON INSECT CONDITIONS IN ALABAMA

On September 24, W. A. Ruffin, Extension Entomologist, Auburn, wrote: "About three weeks ago we had the first general rains over the State that had fallen since the latter part of June. Since that time we have had enough rain, so that there is adequate soil moisture for cotton plants to take on second growth. Since plants have taken on the second growth, many fields of cotton that were highly fertilized have set a good crop of bolls, most of them without having had any insecticides applied to the fields. The indications are that boll weevils dropped to a very low point during the extreme hot, dry weather that continued throughout July and August. I am quite sure that many farmers will say that they made no more cotton after dusting thoroughly than their neighbors did who applied no poison because, as I have advised at an earlier date, most of our farmers who applied insecticides to their cotton this summer did not have high enough weevil infestation to justify poison."

COTTON INSECT CONDITIONS IN VIRGINIA

Wayne L. Howe, Tidewater Field Station, Holland, wrote on September 17: "Bollworm injury has been as high as 20% in large bolls. Most worms are mature and entering the soil for pupation. Later maturing cotton is still being injured, however. Adult boll weevils are abundant in many fields. Nearly all squares and small bolls have been injured in station plots and nearby farms."

A PREDATOR CONTROLS THE BOLLWORM

On September 11, W. A. Stevenson reported that the larvae of a lace wing fly were effectively cleaning up an infestation of the eggs of the bollworm moth and small bollworms on several thousand acres of cotton. He stated that these beneficial insects had saved at least one and possibly two applications of insecticides. He submitted for determination 22 larvae of various sizes that had been collected on cotton at Continental, Pima County, Arizona, on September 5 by William Kauffman. These insects were Chrysopa sp., floradunda group of the family Chrysopidae.

BOLLWORMS, CUTWORMS AND OTHER LEPIDOPTEROUS LARVE ON COTTON

South Carolina: In Florence County G. C. Finklea and L. C. Fife collected 15 "bollworms" from cotton between July 31 and August 2 that consisted of 11 tobacco budworms, Heliothis virescens (F.), from 5 fields; 3 bollworms, H. armigera (Hbn.), from 2 fields, and 1 yellow-striped armyworm, Prodenia ornithogalli Guen.

At Florence S.C. Finklea collected 35 "bollworms" in six cotton fields between July 30 and August 7 that included 26 tobacco budworms, H. virescens from 5 fields, 7 bollworms, H. armigera from 4 fields, 1 yellow-striped armyworm, Prodenia ornithogalli and 1 Heliothis sp.

Arkansas: The County Agricultural Agent at Lake Village, Chicot County, in the southeastern corner of the State collected two "worms" on cotton on July 30, that proved to be the yellow-striped armyworm or cotton boll cutworm, Prodenia ornithogalli Guen.

Louisiana: Albert F. Clary collected 13 "worms" from cotton near Lake Providence, East Carroll Parish, on Aug 2, that included 12 specimens of the yellow-striped armyworm or cotton boll cutworm, Prodenia ornithogalli, and one tobacco budworm, H. virescens (F.).

On July 31, M. T. Young collected four cutworms from the soil in two cotton fields near Tallulah, Madison Parish that proved to be the granulate cutworm, Feltia subterranea (F.).

In the vacinity of Tallulah, Madison Parish, in the northeastern part of the State, G. L. Smith and H. E. West collected 274 "bollworms" and other lepidopterous larvae in 25 cotton fields between July 10 and August 8 that included 142 bollworms from 19 fields and 111 tobacco budworms from 22 fields; 11 yellow-striped armyworms from 6 fields, 5 fall armyworms, Laphygma frugiperda, from 4 fields, 1 "looper" of the Autographa group; 2 cotton square borers, Strymon melinus (Hbn.), from 2 fields; 2 garden webworms, Loxostege similalis (Guen.) from 1 field and 1 obsoleto-banded strawberry leaf roller, Archips obsoletana.

Also in the vicinity of Tallulah Mr. Smith and Mr. West collected 264 "bollworms" in 22 cotton fields between August 10 and 15 that included 144 bollworms, H. armigera; 114 tobacco budworms, H. virescens; 3 "loopers" of the Autographa group; 1 yellow-striped armyworm, Prodenia ornithogalli; 1 cotton square borer, Strymon melinus; and 1 Platynota sp. Both bollworms and tobacco budworms were in all the fields as from 1 to 13 specimens of both species were in each of the 22 collections.

Texas: The Texas Weekly Crop and Weather Bulletin for the week ending September 17 issued at Austin on September 18, states: "The infestations of webworms or careless weed worms were diminishing, although poisoning was continued in some areas."

K. P. Ewing submitted 10 lepidoptorous larvae that were determined by J. G. Franclemont. Single specimens of the bollworm, H. armigera, were taken from cotton in Swisher County on July 12, Crosby County on July 19, and Floyd County on July 20; one yellow-striped armyworm, Prodenia ornithogalli, from Swisher County on July 12, and six from Floyd County on July 20.

R. W. White writing about conditions in the northwestern section of the State on August 22 stated: "The outbreak of webworms seems to have been pretty well controlled, although some farmers are still continuing to apply poison."

K. P. Ewing submitted bollworms and closely related insects collected from 8 farms in 6 counties from July 24 to 28 that included 66 speciemens of the bollworm, H. armigera, from 7 farms in Bell, Caldwell, Lubbock, McLennan, Travis, and Williamson Counties; 8 tobacco budworms, H. virescens, from 4 farms in Caldwell, McLennan, and Williamson Counties; and 1 yellow-striped armyworm, Prodenia ornithogalli, from Lubbock County.

COTTON LEAFWORM

Louisiana: C. E. Smith, Entomologist, reported that a single cotton leafworm had been collected on cotton by L. W. Newsom at Baton Rouge, September 8. This is the only record of the insect in Louisiana this year.

THRIPS

Georgia: C. M. Beckham, Entomologist, Georgia Agricultural Experimont Station, found large numbers of the flower thrips, Frankliniella tritici (Fitch), and